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May 22, 1969

Instruction Memo No. 69-188
Expires: 6/30/69

To: All SCD's, SD's, DM's

From: Assistant Director, Resources

Subject: Release of Exotic Wildlife Species

The Oregon State Director raised the question of his authority to approve release of exotic wildlife species.

On the exotic big game question, Departmental and Bureau policy was established when the Secretary approved pages 15 through 19 of recommendations connected with a study titled "Exotic Big Game on Public Lands" by Craighead and Dasmann. A copy is enclosed for your information and guidance. Please note the "foreword" page to the study wherein the Secretary approved pages 15-19 as public land policy. All introductions of exotic big game species must follow these guidelines and be coordinated with State Game Departments and with all adjacent public land management agencies. Where it appears releases will migrate across state boundaries, it is necessary to coordinate with adjacent Bureau of Land Management State Directors, Game Departments and public land management agencies.

All proposed agreements with field evaluations for the introduction of exotic big game species will be reviewed in this office prior to your approval and signature. This instruction does not pertain where release projects have already been approved for game departments.

The above procedure applies to all exotic species which are not historically native to the United States. If the release is proposed for Alaska, species are considered exotic if not native to that State.

It is the policy of the Bureau that only requests from the State Game and Fish Departments will be considered. Private individuals, associations, and other groups should make their requests through the appropriate State Game and Fish Department.

Eugene V. Zumwalt

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Bureau of Land Management
United States Department of the Interior
Washington, D. C.
1966

Exotic Big Game on Public Lands

by

Frank C. Craighead, Jr.
President
Environmental Research Institute

and

Raymond F. Dasmann, Chairman
Division of Natural Resources
Humboldt State College

September 1964

Advisory Committee

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National Park Service

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Western Association of State Game
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Dr. Harold Coolidge
National Academy of Sciences

Mr. William L. Reavley
National Wildlife Federation

Forward

Dr. Craighead and Dr. Dasmann were retained as consultants by the Bureau of Land Management to investigate the advisability of the introduction of exotic big game species on public lands; and to recommend guidelines to be followed in considering proposed releases. The report was submitted to an Advisory Committee appointed by Secretary of the Interior, Stewart L. Udall. The Committee was composed of representatives from State and Federal agencies, private conservation organizations, and the National Advisory Board Council of the Bureau of Land Management. The Committee, after a review, recommended that the report be adopted; former Bureau of Land Management Director, Charles H. Stoddard concurred in this recommendation. In August 1966, the guidelines and recommendations contained herein on pages 15, 16, 17, 18, and 19 were approved by Secretary Udall as public land policy.

August 1966

3. The history of animal introductions reveals dismal failures and disastrous and disruptive consequences; as well as both successful introductions and those that quite definitely can be considered beneficial. A well-defined but flexible policy appears to be needed.

4. Most introductions have not been made in the public interest. They have been haphazard affairs, not scientifically planned or executed. The history of exotic releases vividly points up the need for a systematic approach to the subject.

5. It is evident that we have not had in the past and still do not have sufficient information and knowledge to introduce exotic species with any assurance that they will be successes or failures, prove detrimental or beneficial. We cannot as yet predict consequences, especially long-range side effects.

6. The principal dangers resulting from the successful introduction of an exotic species are the establishment of nuisance and pest species, the establishment and spread of diseases, the initiation of forces bringing about disruptive ecological changes, added competition with native forms, and hybridization resulting in inferior species or the elimination of species.

7. There is evidence that vacant ecological niches exist, some created through natural processes and others brought into existence by the activities of man. There is a growing demand to fill these with game species. Almost nothing is known about the existence, nature and extend of vacant ecological niches.

8. Most of the introduced species that are now abundant were not established as a result of the first introduction.

EXOTIC BIG GAME ON PUBLIC LANDS

INTRODUCTION

The purpose of this report is to provide information for determining if, where, and under what conditions, exotic mammals, particularly big game species, might be released on federal lands and to suggest guidelines for consideration in specific release proposals. The approach has been to analyze the effects and results of past introductions, to study and assess field conditions and to evaluate these on a basis of ecological knowledge and principles. The authors wish to acknowledge the contribution of numerous scientists and writers most of whom cannot be individually credited in a report of this kind (see bibliography). Thanks is also extended to Federal and State employees and to private individuals who generously provided information and facilities.

A rapid survey of the literature on introductions, reveals certain generalities concerning the release or transplantation of exotic animals. A better understanding of the subject of exotic mammal introductions can be achieved within the context of this broader view.

1. There is a worldwide trend toward dissemination and establishment of exotic plant and animal species. This is progressing through both planned introductions, accidental escapes and natural spread. Though it can be accelerated or retarded, the facts of the case and the forces at work indicate that the trend will continue indefinitely into the future.

2. There are still "wild" areas of the world where the endemic fauna and flora are relatively unmodified by recent introductions of exotics. For a variety of reasons it seems desirable to maintain such areas in their virgin condition.

9. Participation in outdoor recreation activities, including big game hunting, will grow. Accompanying stepped-up demand by sportsmen for increased game supplies is to be expected. The introduction of exotics is one possible approach toward satisfying the demand.

10. The main causes of failure of past introductions were failure to consider the characteristics of the species to be introduced, failure to determine in advance climatic and habitat requirements and failure to liberate a sufficient number of healthy individuals under conditions comparable to the original environment.

OPINIONS ON EXOTICS

Exotic ungulates in America have a history dating back to the first explorations and settlements in the New World. Soon after the Americas were colonized, the horse and hog became established as feral animals and were to be followed in some areas by representatives of many other domestic groups. The introduction of wild game came later in time, but dates back at least to the 18th century. It is too late, therefore, to decide whether exotic ungulates should or should not be introducted. They are already here. We can only determine the extent to which further introductions might be beneficial or desirable.

A dearth of fact provides a wide field for the expression of emotional opinion on the subject of exotics. There are excellent reasons why the introduction of exotics should be considered seriously for certain lands, and equally good reasons why such introductions should be unfavorably considered in other areas or under other circumstances.

Those who oppose the introductions of exotics often base their opposition on one or more of the following grounds: (a) Exotic species can create further land use conflicts in areas already fully stocked by domestic ungulates and native wild game. (b) Exotic big game may displace native species from habitats where these natives still exist. (c) Exotic species can disrupt the balance existing within natural communities, and thus destroy those areas that we hope to maintain in a primitive or representative natural state. (d) We should concentrate on preserving an American biota in America, an African biota in Africa, an Asian in Asia, and not accelerate an already world-wide trend toward biotic uniformity. (e) The money spent for exotic introductions would go much further if used in improving habitat conditions and preserving environment for native species. (f) Exotic ungulates can be difficult or impossible to control where circumstances favor their rapid spread and increase.

Those who favor the introduction of exotics base their arguments on the premise that North America has many vacant exologic niches, not occupied or only partially filled by native species. Exotic animals could fill these niches and thús promote faunal diversity in this continent. This would be of value for: (a) Making available to the sportsmen a greater abundance and variety of shootable game. (b) Increasing yields of meat and other economically useful products from wild lands. (c) Proving an opportunity to preserve in America species that are in danger of extinction in their native lands.

Conflicting opinions on the desirability of exotic introductions have led the game departments of some States to come out in firm opposition to exotic ungulates, and have led other States to start a vigorous program aimed at widespread introductions of exotics. Those who strongly oppose exotic ungulates often offer enthusiastic approval of exotic game birds. Decisions should be based logically upon knowledge of the effects of earlier introductions on the land and its native biota, and on detailed studies of the ecology of the species proposed for introduction. But such knowledge and studies are limited and at present, there is inadequate information to support any firm conclusions. In the absence of such knowledge, and to protect the public interest on federal lands, it is important for the agencies concerned with the conservation of these lands to develop an interim policy governing the introduction of exotic ungulates on lands under their administration. It is also desirable that they support the studies needed to acquire the necessary information.

REGULATION AND CONTROL OF EXOTIC BIG GAME

Federal regulations prevent the direct introduction and release in the United States of big game animals from foreign countries. Such animals can be imported by zoological gardens, or similar institutions, but may not be released from these places. The offspring of these zoo animals can be sold to private game farms or used to stock private or public land, subject to State regulation and agreement of private land owners or public land administrators. State regulations governing the movement and release of exotics vary greatly. In Texas, private land owners can purchase, transport, and release exotic big game. In California, since 1963, the importation, transportation, or release of such animals by private individuals is prohibited. California, therefore, has tight control over exotic big game releases; Texas has virtually no control. Both States have well-established populations of exotics over which no effective control has been exercised. New Mexico and Nevada propose releases of exotic big game on public lands. Arizona and California propose to restrict or prevent such releases.

States that favor the release of exotic big game believe that they can control the numbers and distribution of these animals through hunting. However, few States have actually demonstrated the ability to consistently control the numbers of any species of big game, native or exotic, that makes effective use of cover, is abundant, and widely distributed. Such species as the horse, zebra, or perhaps oryx, that occupy an open habitat, perhaps can be easily controlled. Species such as the kudu, various deer, and small antelope that prefer dense, brushy cover, can be difficult to control under most conditions. Departments of Game that are willing and able to attempt control over the numbers of exotics, can be readily prevented from doing so by the action of Fish and Game Commissions or State legislatures just as some State departments have been prevented from efforts to control the numbers of native deer. The lack of uniformity of State regulations and the probability of exotic release and spread on federal lands creates a problem for Federal land management agencies.

EVIDENCE FROM RECENT EXOTIC INTRODUCTIONS

The Texas Situation: Into the State of Texas more species of exotic ungulates have been introduced than into any other comparable area of North America with which these writers are familiar. Exotic big game animals are now established in 48 of the 254 counties in the State, from the arid west to the humid east. Jackson (1964) has listed the following species of exotics found in Texas with the approximate numbers of each:

Axis deer (Cervus axis)	2,196
Sika deer (Cervus nippon)	634
Fallow deer (Cervus dama)	220
Sambar deer (Cervus rusa)	38
Barasingha deer (C. duvauceli)	32
Red deer (Cervus elaphus)	21
Barbary sheep (Ammotragus lervia)	1,588
Mouflon sheep (Ovis musimon)	1,846
Blackbuck (Antilope cervicapra)	3,693
Nilgai (Boselaphus tragocamelus)	3,334
Eland (Taurotragus oryx)	5
Oryx (Oryx gazella)	3
Wild boar (Sus scrofa)	Over 575

Except for the smaller numbers, all of the above figures are estimates and probably conservative. The rate of introduction, spread and increase of exotics has been accelerating. Although most species are on private ranches under fence, some are now well established and increasing in the wild. The axis deer, fallow deer, red deer, Barbary sheep, mouflon, blackbuck, nilgai, and wild boar all have unfenced populations. With the exception of the red deer, which is doubtful as yet, all of these must be considered successful introductions into unfenced land. Species that have shown little increase or have remained static in numbers are the sambar, barasingha, red deer. The eland and oryx, recently introduced, have thus far failed to reproduce.

There is little information available on competition between native and exotic ungulates. A paper by Sanders (1963), based on a study near Laredo, reports that the blackbuck, sika deer, mouflon, axis deer and native white-tailed deer tend to seek out different, non-conflicting habitats. In this area, however, the exotics were barely maintaining their numbers, and not increasing. White-tailed deer were abundant and thriving. "Deplorable range conditions due to chronic overgrazing by cattle" were said to exist on the ranch used as a study area.

An example of the rate of increase and spread of an exotic ungulate is provided by the nilgai. This species was introduced in 1930 to a ranch on the lower south Texas coast. The original broodstock was thought to be twelve. The species now occupies 1,425,000 acres on six adjoining ranches and numbers 3,334.

The California Situation: The vegetation of California has been drastically modified through overgrazing, mostly attributed to domestic livestock, but added to by feral ungulates. Most of the grasslands are now dominated by exotic annual grasses and forbs brought in, mostly, along with domestic animals. Soon after Spanish settlement, feral horses and cattle spread over the grasslands of California. Early explorers from the American States found herds of wild horses and cattle existing along with abundant populations of native elk, deer, and antelope. Most of the damage to the rangelands must be blamed on the combination of drought and unchecked increase in domestic livestock.

Since its early history, many species of wild exotic big game have been introduced into California. A survey by the California Department of Fish and Game shows that twelve species of exotic wild ungulates have been established in the State. These include:

Fallow deer (Cervus dama)	500 plus
Spotted deer (Cervus alfredi?)	60
Black deer (?)	20
Sambar deer (Cervus unicolor)	10
Axis deer (Cervus axis)	?
Sika deer (Cervus nippon)	?
Barbary sheep (Ammotragus lervia)	300
Tahr (Hemitragus jemlahicus)	60
Burchell Zebra (Equus burchellii)	15
Wildebeest (Connochaetes taurinus)	?
Mouflon (Ovis musimon)	15
Wild boar (Sus scrofa)	3,000 plus

Of these species only the wild boar can be considered as widely and successfully established in the wild. It has maintained itself, increased and spread from the original introduction site since it was first brought into the State in the 1920's. It now ranges from the Carmel Valley south through the Santa Lucia Mountains as far as Nacimiento Lake, a distance of at least 70 miles from the original site. Throughout the area occupied by the wild boar, the native black-tailed deer remains abundant.

For nearly twenty years, white fallow deer have been present on the Ridgewood Ranch near Ukiah. Fifty animals were introduced, and an estimated 250 to 300 are now present. The species has not spread widely. The black-tailed deer remains very abundant in the same area.

Near Drake's Bay, the Ottinger Ranch supports three kinds of deer said to be fallow, spotted and black deer. These were introduced around 1940 and have increased from 65 to an estimated 220. They have not dispersed widely. The native black-tailed deer remains abundant in the same area.

The greatest variety of exotic big game exists on or has escaped from the Hearst Ranch near San Simeon. Here the fallow deer, sambar, axis deer, Barbary sheep, tahr, zebra, wildebeest and perhaps other species are to be found. The Barbary sheep and tahr are said to have spread into the Santa Lucia mountains. Both numbers and distribution are only a guess.

New Mexico: Much publicity has been given to proposals for the introduction of exotic big game into New Mexico. One species, the Barbary sheep, has been successfully introduced, and the introduction of others is planned. It has been claimed that New Mexico could provide a haven for species threatened with extinction in Africa. Kudu, gemsbuck and ibex have been brought from Africa to the Albuquerque zoo. When sufficient offspring have been produced, it is planned to release these three species into wild areas.

The Barbary sheep was deliberately released in the Canadian River canyon of northeastern New Mexico in 1950. Since then, there have been two releases of Barbary sheep in western and southern New Mexico. The Canadian River introduction has been studied. Little is known of the status of sheep in the two other areas. In the Canadian River canyon, the Barbary sheep population increased from 52 to more than a thousand between 1950 and 1961. From the original release site, near Roy, they have spread northward as far as Colorado, a distance of 80 miles, and southward beyond the Conchas Reservoir, a distance of at least 50 miles. The spread has mostly been confined to the habitat provided by the brush-covered, rocky rims of the canyon. East and west of the canyon, rolling grassy plains occur and these have not been occupied by sheep. The habitat characteristic of the Canadian rims, however, continues on mesa slopes over a large area of New Mexico. There is no real barrier to the continued spread of the sheep.

In 1962 it was thought that the Barbary sheep had decreased since hunters failed to find sheep in places where they had been located in earlier years. In 1963 and 1964 hunting was discontinued. In the absence of hunting, it has been virtually impossible to keep up with the numbers or distribution of the sheep. Some believe that the sheep have not decreased, but have dispersed more widely. Only further study will reveal the truth. The kind of habitat occupied is rough and hard to traverse, making it difficult to control the Barbary sheep if they once become both widely dispersed and numerous. In the absence of hunting, the use or radio-tagged sheep might provide the needed information on dispersal and population ecology.

Nevada: Nevada has no reported populations of exotic big game, although feral horses and burros are widely distributed. The Fish and Game Commission, however, has proposed the introduction of the Barbary sheep into the State. Since it was planned to release these animals on federal lands, it was thought advisable by the Bureau of Land Management, the agency in charge of the administration of this land, to have an impartial committee review the situation and the possible problems involved. The introduction of Barbary sheep has, therefore, been postponed until such time as a policy governing future introductions of exotic big game can be decided upon for lands under BLM administration.

The proposed release site for Barbary sheep lies in the Seven Troughs Range northwest of Lovelock. The area was chosen because it seemed to present a minimum chance for conflict between Barbary sheep and native big game. It is bounded by deserts, saltbush flats, alkali lakes and other habitat thought poorly suited to the sheep and likely to serve as a barrier to their spread. Big game animals are scarce in the area. A few mule deer occur in mountains near the western boundary; a small band of antelope has been reported near the eastern boundary; small bands of mustangs and wild burros range over the area. The State, itself, has scattered populations of the desert bighorn sheep (*Ovis canadensis nelsoni*) as well as the largest remaining concentrations of this animal.

The proposed release area is poor habitat for native big game since the mountains do not rise high enough to support the better browse-plant communities. The entire region is dry, overgrazed, and probably overstocked with domestic livestock. It forms a summer range for cattle and a winter range for sheep. Grass cover is dominated by exotic annuals, such as cheat grass, and red brome. The exotic chukar partridge is well established and numerous.

There is little question, therefore, of interference with an undisturbed native biota. The nearest native bighorn sheep occur 125 air line miles away in the country west of Walker Lake. With the introduction of bighorn to the Sheldon Refuge, native sheep will be located within 100 miles of the release site.

If Barbary sheep are to be introducted into Nevada, the Seven Troughs Range provides a site least likely to provide conflict with other more important land uses. There is no way, however, for predicting whether the sheep will survive in, or remain in, the area in which they are to be released. If they should become established, their impact on the range is not likely to improve conditions.

The greatest danger from such an introduction lies in the possibility of spread to existing desert bighorn ranges. If this occurred, it could be a very real threat to the survival of the native species.

NICHES AND COMPETITION

Some problems involved with exotic big game are best viewed in the light of happenings over the past 8,000 to 9,000 years. The ungulate populations of North America were vastly different 9,000 years ago from what they were when the Europeans first arrived in America. The variety and abundance of American ungulates at the end of the last glacial age equalled that to be found in the savannas of Africa today. For reasons not fully understood, most of these animals became extinct. Some believe that primitive man was a factor in causing these extinctions. The botanical evidence suggests that the plant communities that supported the post-Pleistocene abundance and variety of big game were not different from those that exist today. From these and other data, it can be postulated that the extinctions of native ungulates left ecologic niches that have not yet been filled by those species that survived in America.

The introduction of exotic species to America differs only in degree from the normal changes that have been taken place in modern man's absence. The moose, caribou, mountain sheep, elk and bison, for examples, are exotics in the sense that they are relatively recent immigrants from Eurasia. They have moved into a continent previously occupied by such long-established residents as the mule deer, pronghorn and white-tailed deer. Presumably, they have survived here only because they were more adaptable, better competitors or found vacant niches that could be occupied.

The success of various feral ungulates might be considered further evidence for vacant niches. The speed with which the horse increased in numbers and spread over the Americas suggests that it found a niche not occupied by any competing species. There is no evidence that it has anywhere displaced native ungulates. Feral hogs and feral burros have also adapted to North America with apparent ease and have occupied extensive areas. The evidence for competition with or displacement of native ungulates is inconclusive. By contrast, except for islands, the feral goat and feral sheep have not done well in the Americas, although small populations hold out in some places.

In addition to feral ungulates, there have been many introductions of wild exotic ungulates into North America. These introductions have met with varying degrees of success. There is as yet little evidence of serious conflict between native big game and the exotic wild species. However, the situations involved have not yet been adequately studied.

In considering the arguments for the introduction of exotics, the basic premise, that vacant niches do exist, seems to be supported by the available evidence. The assumption, however, that suitable species can be found to fill these niches finds less support. Most exotic big game introductions have been only partial successes, and many have failed. Costs are relatively high. It is virtually impossible to predict whether a species will adapt to an American environment in advance of its actual introduction. Even when a species has been introduced, it may take many years, or decades, before we can know whether or not it will ultimately survive, increase and spread, or alternatively, fail.

MAINTAINING THE PRIMITIVE SCENE AND NATIVE BIOTA

An opposition to the introduction of exotics based on a desire to maintain, or restore, the primitive scene in America, as it was before civilized man began to modify it, is certainly legitimate. It should be realized, however, that it is a desire to maintain the pre-Columbian, or pre-settlement scene, with the natural communities that existed at that time. Further back in time other natural communities did exist. There can be an equally legitimate desire to attempt to restore a much earlier American biota through introduction of the near relatives of now extinct American forms. The scientific value of such an attempt is as obvious as the value of preserving or restoring the Pre-Columbian biota.

DISRUPTIVE EFFECTS OF EXOTICS AND LAND-USE CONFLICTS

Thinking on the subject of exotic big game is colored by the unfortunate consequences of exotic introductions on islands. The examples of Hawaii and New Zealand, where severe disruption of the native biota took place when exotic ungulates were introduced, are well known. Australia, island-like in its isolation from other continents, provides similar illustrations. In Europe, hybridization has caused the extermination or near loss of native ungulate races and species. Evidence of disruptive effects from the larger continents similar to that from islands is not available. Nevertheless, since this threat is always present, the burden of proof must rest on those who would introduce new species. Before an exotic is turned loose, it should be demonstrated that it will not cause disruption or displacement in the native biota or serious conflict with other, more valuable forms of land use. This does not rule out the introductions of exotics in areas that do not have primary value for preservation of native biota, or high economic value for other conflicting land uses. Introductions into such areas should be preceded by evidence that the new species can be confined to these areas.

GUIDELINES FOR THE INTRODUCTION OF EXOTIC BIG GAME ANIMALS

When an animal species is introduced into any environment, it has both the potential to produce disruptive, often uncontrollable forces as well as to fill a vacant niche and fit into an existing ecological pattern with beneficial rather than deleterious effects. Big game releases, therefore, should be preceded by scientific study with the findings carefully evaluated and the release systematically planned. It should be determined that the introduction will fulfill a desirable objective, and that maximum safeguards have been taken to protect native biota. Provision should be made for follow-up in the form of scientific investigations on the status of the released animal.

Some factors and conditions that should be considered as a guide to introductions are:

1. It should be objectively determined that there is a real need for a proposed introduction, and it should appear likely that the introduction will have desirable ecological, recreational and economic impacts.
2. The introduction should fill a definite vacant ecologic niche, one not filled or suitable for a native species. The probable existence of such a niche should be reasonably well documented.
3. An introduction should not be considered if there is any danger, even apprehension, over the action leading to drastic reduction or regional displacement of indigenous populations. Pending future study, the introduction of exotic big game species on federal lands should be governed by the necessity for protecting the native biota and for preventing conflict with other existing or proposed land uses.
4. Studies of the ecology of the animal considered for release should precede and guide introductions. Studies should, likewise, be made to determine the suitability of the proposed release area.
5. Every effort should be made to study disease interrelationships and to take steps for assuring effective quarantine resulting in disease-free game.
6. Precautions against hybridization should be taken by selecting animals that do not have close relatives in this country and rejecting those that do.
7. Small trial introductions in suitable areas using adequate numbers of stock should first be conducted on an experimental basis under controlled conditions such as in a fenced area. The results should be carefully studied using the latest and best research methods. An evaluation of this introduction should serve as a basis for further action.

8. Before an exotic is introduced, positive assurance should be obtained that adequate control methods can be instigated to prevent overpopulation or spreading.

RECOMMENDATIONS

In view of the foregoing discussion and considerations, the following recommendations are made:

1. The introduction of an exotic species should be considered as a crucial decision taken only after thorough research and competent and unbiased evaluations. To insure this, the federal government should institute studies or encourage cooperative studies with the States as soon as feasible. to gather data on the ecology of big game animals proposed for, or potentially suitable for, introduction into the United States. Studies should be instituted as soon as possible in areas where exotic big game are already established in the United States with a view toward determining their impact on the native biota and the characteristics of their population ecology, including rates of increase and distances of movement and dispersal, predation effect, disease status, degree of control and change in habits.
2. No exotic big game animals should be permitted in national parks, wilderness or primitive areas, wildlife refuges, native game ranges or other areas designated for the preservation of native flora and fauna in an undisturbed, or relatively undisturbed condition.

To protect the above areas, exotic big game animals should be excluded from a buffer area surrounding each of these areas. The width of the buffer strip should be determined by the mobility of the exotic big game animals concerned, type of terrain and the ease with which it can be controlled.

3. Exotic big game animals should be excluded from the vicinity of any area in which rare or uncommon native big game species occur until such time as it can be conclusively demonstrated that no conflict will occur between the native and the exotic species.
4. Exotic big game animals should be excluded from any area of federal land that is of primary value as livestock range and is already fully stocked with domestic livestock. Exceptions to this should be made only when it has been shown conclusively that the exotic animal will not compete significantly with domestic species.
5. To prevent conflict with other uses of the land such as timber production, farming, urban development, or intensively used recreation sites, exotic big game animals should be excluded from the vicinity of areas of primary value for these other purposes, except where it can be demonstrated that uses can be fully coordinated.
6. On other federal lands, exotic big game may be introduced under permit from the federal land management agency. The terms of such an agreement must include a commitment by the state agency concerned to maintain numbers of exotics at levels determined by the federal agency to be within the safe carrying capacity of the habitat, and to use every means for preventing the spread of such

exotics into any of the areas from which they are excluded for the reasons listed above.

7. Individuals or organizations that introduce exotic big game animals that spread from state, from other public, or private lands into federal lands, without permit or prior agreement, should be held liable for any damages that result from the spread of these exotics, and responsible for any expenses incurred in their control.
8. Policy in regard to the introduction of exotic mammals on public lands should be flexible, that is, periodically reviewed and if necessary, revised in light of new knowledge, new technology and the numerous and tremendous changes that are rapidly, and in some cases, permanently altering our environment. It should also reflect that the introduction of exotics is itself a force capable of causing drastic changes in environment; that considered in its totality, we are a part of this environment as well as being dependent upon its proper functioning for our existence.

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